

### **REMARKS**

Applicants note in the Examiner's Advisory Action dated August 7, 2003 that the request for reconsideration has been considered but does not place the application in condition for allowance because the Examiner contends that all Applicants' concerns have been addressed in the final rejection mailed on June 17, 2003. Applicants respectfully submit that although the communication dated June 17, 2003 was not designated as a final rejection, Applicants' attorney has been informed by his docket administrator that the Examiner has taken this position in a recent telephone communication and accordingly states his position for the record in response to said final Office Action.

### **Drawings**

The Examiner states that the drawings must show every feature of the invention specified in the claims, specifically the heat pipe panel must be shown or the features canceled from the claims and objects to the drawings on this basis under 37 CFR 1.83(a). Applicants again respectfully point out to the Examiner that the amendment filed in Paper No. 3, April 1, 2002 satisfies the Examiner's objection in lieu of a drawing correction as follows: The paragraph starting at page 2, line 35 has previously been amended at page 3, line 3 by inserting reference numeral 12 after "panels" and before "13,". Applicants respectfully submit that radiator panels 12 and 13 are designated in said paragraph as heat panels (12, 13), therefore, obviating any necessity to amend the drawings in satisfying the Examiner's requirement that the heat pipe panel must be shown in the drawings. Applicants respectfully submit that heat panels 12, 13 are shown in Fig. 1 and Fig. 2 and accordingly this objection to the drawings should be withdrawn since no further amendment to the drawings is required.

### **Specification**

The Examiner has maintained his objection to the specification under 37 CFR 1.71 because the originally filed specification fails to disclose "a remotely-located heat source

disposed...at a location that is remote from the heat dissipating system...; and a loop heat pipe thermally coupled between the heat source and the heat dissipating system."

As previously submitted, Applicants again respectfully contend that there is sufficient disclosure for the limitation "a remotely located heat source disposed...at a location that is remote from the heat dissipating system" to be found in claims 3 and 5 as originally filed, and at Page 4, line 6 et seq. in the specification where it is stated "a heat source 14 is disposed 31 on a spacecraft 20 at a location that is remote from a thermal radiator (12, 13)" and is similarly mentioned several other places in the specification using alternative terminology.

Further, the Examiner states that "...; and a loop heat pipe thermally coupled between the heat source and the heat dissipating system" is not disclosed.

As previously submitted, Applicants again respectfully contend that sufficient disclosure of a "loop heat pipe thermally coupled between the heat source and the heat dissipating system" is found at page 4, line 7 et seq. wherein it is stated "a heat transfer system 10 comprising a loop heat pipe 10 is thermally coupled 32 between the heat source 14 and thermal radiator (12, 13). Heat generated by the heat source 14 is coupled 33 to the thermal radiator (12, 13) by way of the loop heat pipe 10."

Further, as previously submitted, at page 4, line 11 et seq. it is stated "thus, a heat transfer system comprising a loop heat pipe and heat transfer method that transfers heat from a remotely located heat source to a spacecraft thermal radiator have been disclosed."

The Examiner has rejected claims 1-6 under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The Examiner states that with regard to claims 3 and 5, the originally filed specification fails to disclose "a remotely-located heat source disposed...at a location that is remote from the heat dissipating system...; and a loop heat pipe thermally coupled between the...heat source and the heat dissipating system."

As previously submitted, Applicants respectfully contend that sufficient disclosure has been shown in claims 3 and 4 as originally filed, for example, in claim 3 at line 2 it is claimed:

“a heat dissipating apparatus for radiating heat into space;  
a heat source disposed at a location that is remote from heat dissipating apparatus; and  
a loop heat pipe thermally coupled between the heat source and the heat dissipating apparatus for coupling heat generated by the heat source to the heat dissipating apparatus.”

Again, as previously submitted, Applicants respectfully contend, as recited above, at page 4, line 6 et seq. in the specification, it is stated “a heat source 14 is disposed 31 on a spacecraft 20 at a location that is remote from a thermal radiator 12, 13. A heat transfer system 10 comprising a loop heat pipe 10 is thermally coupled 32 between the heat source 14 and the thermal radiator 12, 13. Heat generated by the heat source 14 is coupled 33 to the thermal radiator 12, 13 by way of the loop heat pipe 10.” Applicants respectfully submit that this subject matter was described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors at the time the application was filed had possession of the claimed invention. As previously contended, Applicants respectfully submit that the originally filed specification does disclose “a remotely located heat source disposed...at a location that is remote from the heat dissipating system...; and a loop heat pipe thermally coupled between the...heat source and the heat dissipating system” in the claims and in the specification as recited above which is hereby respectfully incorporated by reference.

Accordingly, Applicants respectfully contend that this ground of rejection has been obviated and respectfully request that the Examiner withdraw same.

The Examiner has rejected claims 1-6 under 35 U.S.C. § 102(b) as being anticipated by Esposto. The Examiner directs Applicants' attention to at least Figure 1 and column 4, lines 20-22 of said reference.

As previously submitted, Applicants respectfully contend that in Esposto (U.S. Patent No. 5,743,325) there is disclosed a closed-loop heat pipe transport design for a deployment application having a flexible section which connects to a payload structure and a deployable structure. The flexible section folds over itself while the deployable structure is stowed. Upon rotation of the deployable structure around a predetermined axis, the flexible section unfolds, with a portion of the flexible section passing through the predetermined axis. When the deployable structure has completed its rotation and is fully deployed, the components of the flexible section will lie in substantially the same plane as previously pointed out by Applicants.

As previously submitted, Applicants again respectfully contend that in Figure 1 of Esposto, there is no designation of a heat dissipating system having a remotely located heat source which is not located on a heat pipe panel wherein a loop heat pipe thermally coupled between the remotely located heat source and the heat dissipating system couples the heat generated by the heat source to the heat dissipating system as required in the claims of the instant invention. Likewise, as previously pointed out by Applicants, these features of the claims of the instant invention are nowhere to be found in col. 4, line 11-14 wherein it is stated "Several possible positions of the serpentine section 20 are shown in FIG. 1. The serpentine section 20 is fastened on one end to the fixed radiator panel 14 and on the other end to the deployable radiator 10."

As previously concluded, Applicants again respectfully contend that this recitation clearly states that the serpentine sections of the heat pipe are fastened on one end to a fixed radiator and on the other end to a deployable radiator and nowhere is it expressly stated, implied or suggested that a loop heat pipe may be thermally coupled between a remotely located heat source and a heat dissipating system for coupling heat generated by

the heat source to the heat dissipating system as set out in the claims of the instant invention.

As previously submitted, Applicants do not at all understand and respectfully disagree with the Examiner's assertion that Applicants' originally filed specification at page 1, lines 4-14 have been contradicted by any of Applicants' statement regarding known prior art. Since the Examiner has not specifically pointed out or recited these statements, Applicants cannot further specifically address this assertion.

Applicants respectfully contend that they have satisfied their duty of disclosure as requested by the Examiner since they have stated in the previous response that they know of no specific prior art which is responsive to the Examiner's request and Applicants had no knowledge of pertinent prior art as stated in their Declaration and are not now aware of pertinent prior art responsive to the Examiner's request. Applicants respectfully submit that with regard to the Examiner's conclusion relating to Applicants' knowledge of and design of spacecraft and their knowledge of individuals substantively involved with the preparation and/or prosecution of the patent application that they state that they have no such other information responsive to Examiner's request other than that alluded to by the Examiner and as generally set out in the specification as filed.

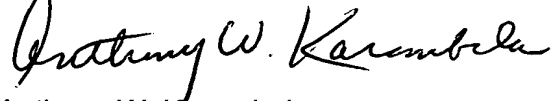
Applicants again note that the prior art made of record and not relied upon is considered pertinent to Applicants' disclosure but Applicants respectfully contend that since this art has not been specifically applied, no further comment is deemed necessary with regard to it.

In view of the above remarks, Applicants respectfully contend that all of the claims presently under prosecution have been shown to contain patentable subject matter and to be patentably distinguishable over the prior art of record Esposto.

Accordingly, Applicants again respectfully request that this application be reviewed and reconsidered in view of the above remarks and that a Notice of Allowance be issued at an early date. If the Examiner, upon further reconsideration, maintains his position, Applicants respectfully request, in view of the shortened period for response, that

Applicants be telephonically so advised so that the appropriate Notice of Appeal may be filed.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Anthony W. Karambelas". The signature is fluid and cursive, with the first name "Anthony" being more prominent.

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